IN THE CLAIMS

Please amend the claims as follows:

1. (original) Radiation detector apparatus (10) with an array (12) of detector pixels, wherein each pixel (20) comprises: a) a conversion element (26) for the conversion of incident radiation (ν) into free charges; b) a charge storage element for the storage of said free charges, comprising a charge storage region (25) and a photogate electrode (21) being disposed on and electrically isolated from the charge storage region (25) for inducing an electrical field in it; c) a photogate line (32) that connects the photogate electrode (21) to an external driver circuit (14); d) readout elements (23, 24) for the selective conversion of the charges stored in the charge storage element (21, 25) into an electrical signal on an output line (31) of the pixel; and wherein at least one of the photogate lines (32) is connected to the corresponding external driver circuit (14) via a current sensor (40) for detecting displacement currents that are caused by changes in the charge of a charge storage element (21, 25) coupled to that line.

2. (original) Radiation detector apparatus (10) according to claim 1, characterized in that at least one group (22) of

neighbouring pixels (20) is coupled to the same photogate line (32) and current sensor (40).

3. (original) Radiation detector apparatus (10) according to claim 1, characterized in that the external driver circuit (14) is capable of applying a constant voltage to the photogate electrodes (21) coupled to it.

4. (original) Radiation detector apparatus (10) according to claim 1, characterized in that the current sensor (40) comprises a charge-sensitive amplifier.

5. (original) Radiation detector apparatus (10) according to claim 1, characterized in that the charge storage region (25) is made of a semiconductor, preferably of crystalline silicon.

6. (original) Radiation detector apparatus (10) according to claim 1, characterized in that the conversion element (26) is sensitive to visible light and/or X-radiation.

7. (original) Radiation detector apparatus (10) according to claim 6, characterized in that each pixel (20) comprises a scintillation layer (28) for converting incident X-rays (X) into

optical photons (ν).

8. (currently amended) An X-ray examination apparatus comprising: an X-ray source for exposing an object to be examined to X-ray energy; and an X-ray detector apparatus as claimed in ~~any preceding claim~~claim 1, for receiving an X-ray image after attenuation by the object to be examined.

9. (original) A method for controlling an X-ray examination apparatus according to claim 8, comprising: - exposing the object to be examined to X-radiation;
- monitoring output signals of the current sensors (40) during the X-ray exposure;
- halting the X-ray exposure in response to the signal monitoring; and
- reading out the charges stored in the charge storage elements (21, 25) to obtain an X-ray image.

10. (original) A method for monitoring the dose collected by at least one pixel (20) of a radiation detector apparatus (10), the pixel comprising:
a) a conversion element (26) for the conversion of incident radiation (ν) into free charges; b) a charge storage element (21,

25) for the storage of said free charges, comprising a charge storage region (25) and a photogate electrode (21) being disposed on and electrically isolated from the charge storage region (25) for inducing an electrical field in it; c) a photogate line (32) that connects the photogate electrode (21) to an external driver circuit (14); d) readout elements (23, 24) for the selective conversion of the charges stored in the charge storage element (21, 25) into an electrical signal on an output line (31) of the pixel; wherein displacement currents are sensed in at least one photogate line (32), the displacement currents being induced by changes in the charging of charge storage elements (21, 25) connected to said line.